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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/750,304	12/29/2000	Abel C. Dasylva	57983.000012	6728
7590	07/22/2004			EXAMINER BELLO, AGUSTIN
Thomas E. Anderson Hunton & Williams 1900 K Street, N.W. Washington, DC 20006-1109			ART UNIT 2633	PAPER NUMBER
DATE MAILED: 07/22/2004				

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	09/750,304	DASYLVA ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Agustin Bello	2633	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 07 May 2004.
- 2a) This action is FINAL.                    2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 1,2,6,7,10,11,15 and 16 is/are rejected.
- 7) Claim(s) 3-5,8,9,12-14,17 and 18 is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All    b) Some \* c) None of:
1. Certified copies of the priority documents have been received.
  2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |                                                                                                                         |                                                                             |
|-------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                                                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                    | Paper No(s)/Mail Date. _____.                                               |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____. | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
|                                                                                                                         | 6) <input type="checkbox"/> Other: _____.                                   |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.
2. Claims 1, 2, 6, 7, 10, 11, 15, and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ramamurthy in the article "Wavelength Conversion in WDM Networking" in view of Jopson (U.S. Patent No. 5,822,476).

Regarding claims 1, 7, 10, and 16, Ramamurthy teaches a method for optically converting wavelengths in a multi-wavelength system having W wavelength channels, wherein  $W = 2N$ , the method comprising the steps of: selectively directing a received frequency channel corresponding to a respective wavelength channel based upon a predetermined frequency mapping (as seen in Figures 9 and 10), but differs from the claimed invention in that Ramamurthy fails to specifically teach shifting the frequency of the selectively directed frequency channel at least once by an amount defined by  $\pm 2^i \Delta f$ , wherein  $\Delta f$  is a frequency spacing between adjacent frequency channels, and  $i = 0, 1, \dots, N-1$ . However, Jopson, teaches that frequency shifting by an integer of the frequency spacing is well known in the art (column 2 lines 17-50). One skilled in the art would have been motivated to shift a signal according to the frequency spacing between adjacent frequency channels in order to preserve the order of the information transmitted. Therefore, it would have been obvious to one skilled in the art at the time the invention was made to shift the frequency of the selectively directed frequency channel

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at least once by an amount defined by  $\pm 2^i \Delta f$ , wherein  $\Delta f$  is a frequency spacing between adjacent frequency channels, and  $i = 0, 1, \dots, N-1$ .

Regarding claims 2 and 6, 11, 15, the combination of references differs from the claimed invention in that it fails to specifically teach that wavelength channel ordering is preserved by only shifting the frequency of the selectively directed frequency channel to a higher frequency or lower frequency. However, one skilled in the art would clearly have recognized that it would have been beneficial to maintain channel ordering since doing so would also preserve information ordering. Therefore, it would have been obvious to one skilled in the art at the time the invention was made to preserve channel ordering by only shifting the frequency of the selectively directed frequency channel to a higher frequency or lower frequency.

***Allowable Subject Matter***

3. Claims 3-5, 8-9, 12-14, and 17-18 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Response to Arguments***

4. Applicant's arguments filed 5/7/04 have been fully considered but they are not persuasive. The applicant argues that Jopson fails to teach shifting the frequency of a channel by an integer of the frequency spacing. However, the examiner disagrees. According to the applicant's claim the frequency to be shifted is shifted by an amount of  $\pm 2^i \Delta f$ , wherein  $\Delta f$  is a frequency spacing between adjacent frequency channels, and  $i = 0, 1, \dots, N-1$ . Given a case where  $i=0$ , the frequency shift would result in simply  $\Delta f$  or the frequency spacing between adjacent frequency channels. As such, it is clear that Jopson teaches shifting the frequency of a

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channel by at least some frequency spacing equal to the spacing between adjacent frequency channels, hence meeting the limitations of the claim. Furthermore, as stated in the office action, one skilled in the art would have been motivated to shift a signal according to the frequency spacing between adjacent frequency channels in order to preserve the order of the information transmitted.

5. In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

***Conclusion***

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Agustin Bello whose telephone number is (703)308-1393. The examiner can normally be reached on M-F 8:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan can be reached on (703)305-4729. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Agustin Bello  
Examiner  
Art Unit 2633

AB



JASON CHAN  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2600